AP Microeconomics
Test: Factor Markets

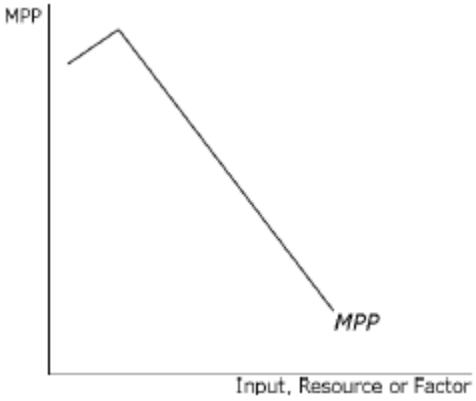
Instructor's Version

Answers: Free-Response Questions

1. Derived-Factor Demand

A. Graph the marginal physical product (*MPP*) curve for a firm in a perfectly competitive market. Make sure you label the graph with *MPP* and input on the correct axes. Why does the curve have the shape it has? (6 points)

Answer

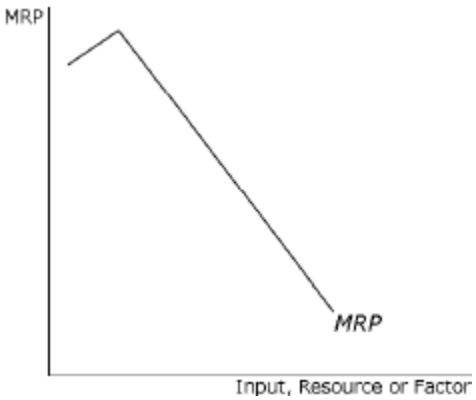


On the vertical axis there should be *MPP*, and on the horizontal axis there should be input, resource, or factor. The *MPP* curve is downward sloping, due to diminishing marginal returns—as more and more of the input is used, total production increases by less and less.

2 points for the graph, 2 points for diminishing marginal returns, 2 points for explaining diminishing marginal returns

B. Graph the marginal revenue product (*MRP*) curve for a firm in a perfectly competitive market. Make sure you label the graph with *MRP* and input on the correct axes. How is the curve similar to the *MPP* curve? How is it different? (6 points)

Answer



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On the vertical axis there should be *MRP*, and on the horizontal axis there should be input, resource, or factor. The *MRP* curve is downward sloping. It mirrors the *MPP* curve, since the firm is in a perfectly competitive market. A change in production does not change the price of either the inputs or the output. Since the output price is unchanged, the *MRP* reflects the diminishing marginal returns of the *MPP*.

2 points for the graph, 2 points for mirroring the MPP curve, 2 points for explaining that the mirroring is the result of the competitive market and output prices that don't change as the quantity of output changes

C. When a firm has more market power, the shape of the *MRP* curve changes. Explain how more market power changes the *MRP* curve. (6 points)

Answer

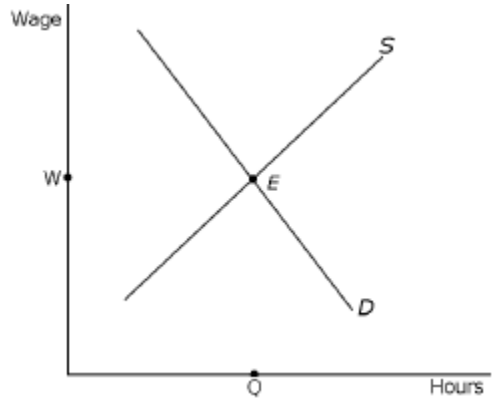
The more market power a firm has, the steeper the slope of the *MRP* curve. This is because marginal revenue falls for two reasons—the increased production is limited by diminishing marginal returns, and the increased production requires a decrease in the price of the production. This second quality to *MRP* curve of a firm with market power results in a *MRP* curve that decreases more quickly, therefore the steeper slope.

2 points for steeper slope, 2 points for recognizing that the increase in production means a lower price, and 2 points for fully explaining the shape of the MRP curve

2. Draw a relatively inelastic demand curve for low-skill laborer hours and a labor supply curve. Use the curves to answer the following questions.

A. Show the equilibrium wage rate and the quantity of labor that will be hired at that wage rate. (6 points)

Answer



A graph with labor demand and supply, where the demand curve is relatively steep.

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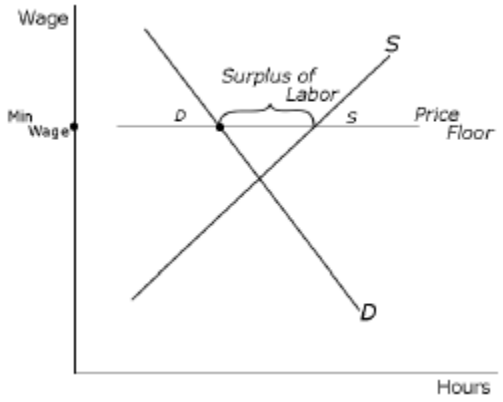
Instructor's Version

The equilibrium wage and quantity of labor should be indicated. The axes should be labeled, with wage on the vertical and hours on the horizontal.

the axes are each worth 1 point, the curves are each worth 1 point, and the equilibrium is worth 2 points

B. Now suppose that a minimum wage law is passed that sets a wage above equilibrium. Show the effect on your graph and explain in words. (6 points)

Answer

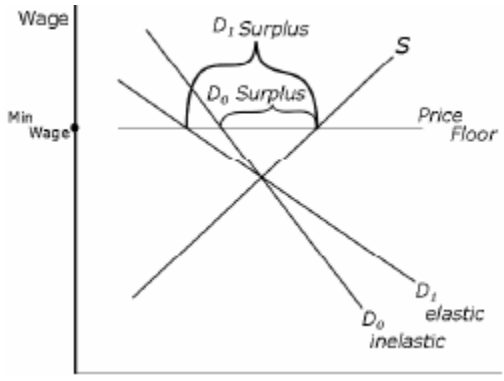


A price floor is now in effect, which results in an excess supply of labor, as more workers want to work, and some workers lose their jobs. The graph should show the quantity demanded and the quantity supplied at the minimum wage.

The graph is worth 3 points . 1 point for the price floor, 2 points for showing the excess supply, or the quantity supplied and quantity demanded. The explanation should say excess supply for 2 points, and loss of jobs for some workers for 1 point.

C. Show on a graph and explain in words how your answer to part B changes if the demand curve is relatively elastic rather than inelastic. (6 points)

Answer



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A graph with a flatter demand curve. The excess supply would be larger, and the loss of jobs for workers would be more significant. Surplus of labor will increase as demand is more elastic.

The graph is worth 3 points. 2 points for the flatter demand curve, 1 point for labels. The explanation should say more lost jobs, for 3 points.

3. Bilateral Monopolies

A. Define a bilateral monopoly. (3 points)

A bilateral monopoly is a labor market with a monopsonist and a labor union operating at the same time.

3 points for the correct answer

B. What impact will this type of labor market have on wages? (3 points)

The monopsonist will probably have to pay higher wages

3 points for the correct answer

C. What impact will this type of labor market have on the number of workers the monopsonist hires? (3 points)

The monopsonist will most likely hire fewer workers

3 points for the correct answer

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